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CLAIMS:

1. Method for de-interlacing, in particular GST-based de-interlacing a video signal with:
 - estimating a motion vector for pixels from said video signal,
 - defining a current field of input pixels from said video signal to be used for
 - 5 calculating an interpolated output pixel,
 - calculating an interpolated output pixel from a weighted sum of input pixels from said video signal, wherein:
 - at least a first pixel from said current field of input pixels is weighted depending on a horizontal component of said estimated motion vector for calculating said
 - 10 interpolated output pixel.
2. A method of claim 1, wherein at least one horizontally neighboring pixel from a single line from said current field of input pixels neighboring said output pixel is weighted for calculating said output pixel.
- 15 3. A method of claim 1, wherein at least one additional pixel from a field of input pixels neighboring said current field is weighted for calculating said output pixel.
4. A method of claim 1, wherein a previous field of input pixels is defined and
- 20 wherein an additional pixel appearing closest to said output pixel when motion compensating said previous field with an integer part of said motion vector is weighted for calculating said output pixel.
5. A method of claim 1, wherein at least three horizontally neighboring pixels
- 25 from each of two lines in said current field neighboring said output pixel are weighted for calculating said output pixel, respectively.
6. A method of claim 1, wherein said weighting of pixels depends on a fractional part of said motion vector.

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7. A method of claim 1, wherein said weighting of pixels depends on a sign of said motion vector.

- 5 8. A method for de-interlacing a video signal, wherein:
- a first output pixel is calculated based on at least one pixel from a current field according to claim 1,
 - a previous field of input pixels is defined and wherein a second output pixel is calculated based on at least one pixel from said current field and at least one pixel from said
 - 10 previous field,
 - a next field of input pixels is defined and wherein a third output pixel is calculated based on at least one pixel from said current field and at least one pixel from said
 - next field, and
 - said output pixel is calculated based on a weighted sum of said first output
 - 15 pixel, said second output pixel and said third output pixel.

9. A method according to claim 8, wherein said output pixel is calculated based on the relationship between said second output pixel and said third output pixel.

- 20 10. Display device for displaying a de-interlaced video signal comprising:
- estimation means for estimating a motion vector of pixels,
 - definition means for defining a current field of input pixels from said video signal to be used for calculating an interpolated output pixel,
 - calculation means for calculating an interpolated output pixel from a weighted
 - 25 sum of said input pixels, and
 - weighting means for weighting at least a first pixel from said current field of input pixels depending on a horizontal component of said estimated motion vector for calculating said interpolated output pixel.
- 30 11. Computer program for de-interlacing a video signal operable to cause a processor to:
- estimate a motion vector for pixels from said video signal,
 - define a current field of input pixels from said video signal to be used for calculating an interpolated output pixel,

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- calculate an interpolated output pixel from a weighted sum of said input pixels, and
 - weight at least a first pixel from said current field of input pixels depending on a horizontal component of said estimated motion vector for calculating said interpolated
- 5 output pixel.